

# **HOSPITAL MANAGEMENT SYSTEM**

## **USING MYSQL**

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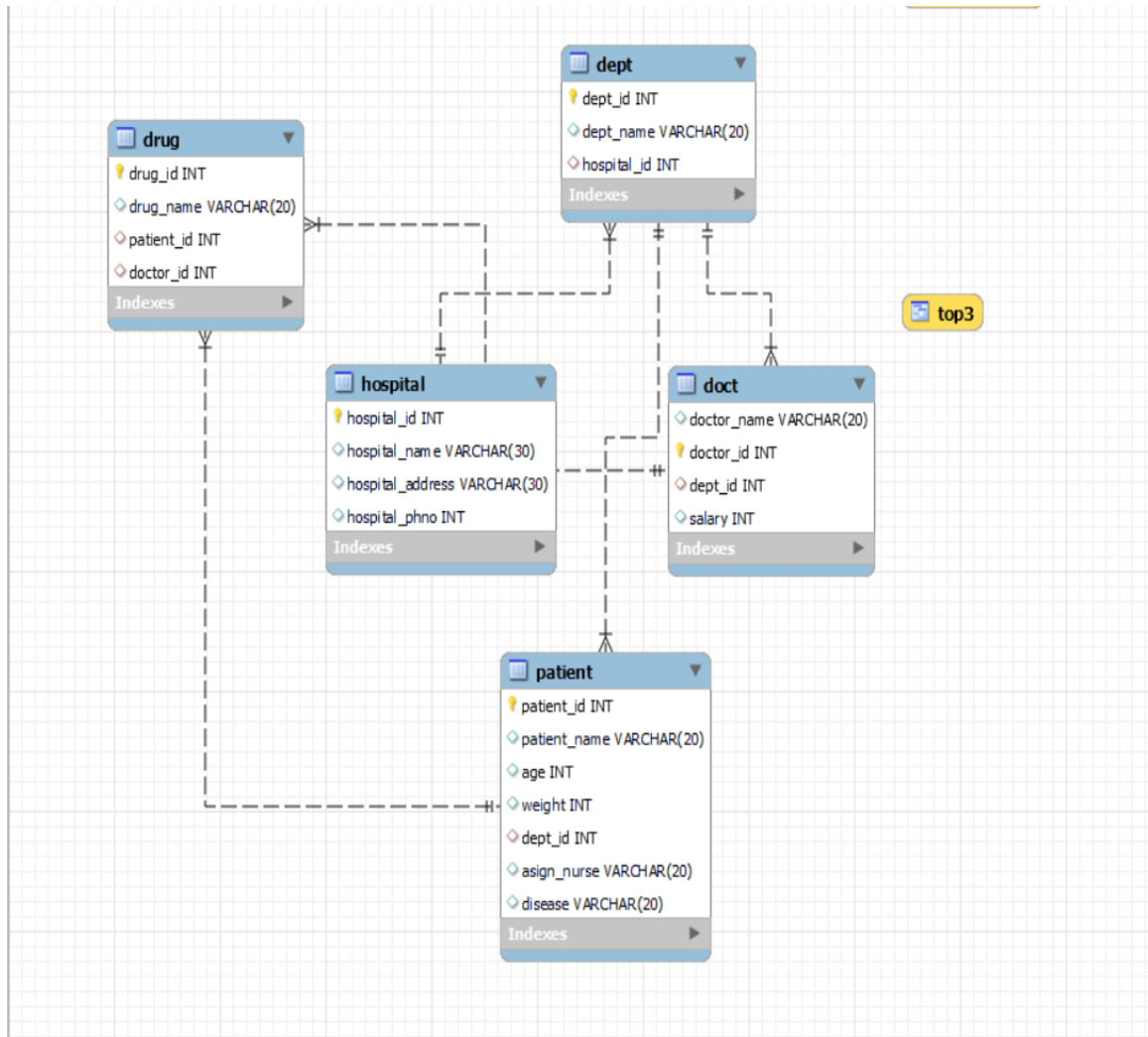
Project Name: Hospital Management System

**SQL (Structured Query Language)**, which stands for Structured Query Language, is a domain-specific language used for managing and manipulating relational databases.

**MySQL** is an open-source relational database management system (RDBMS) that uses SQL as its query language. It is one of the most popular and widely used RDBMSs in the world. MySQL is known for its speed, reliability, and ease of use.

**You have been assigning to create a database of hospital management database system that should store information about patient, doctor, nurse, drug, medical department, hospital. Design the database scheme answer the following questions.**

- **ER DIAGRAM**



### Steps:

- Open MySQL and Create a Database with database\_name called “Hospital”

```
mysql> create database hospitalmanagement;  
Query OK, 1 row affected (0.01 sec)
```

- Show the database

```
mysql> show databases;  
+-----+  
| Database |  
+-----+  
| hospitalmanagement |  
| information_schema |  
| mysql |  
| performance_schema |  
| sys |  
+-----+  
5 rows in set (0.00 sec)
```

- Use the database

```
mysql> use hospitalmanagement;  
Database changed
```

- Create Tables of Patient, Doctor, Nurse, Drug, Dept, Hospital. Specify necessary columns and data types for each table

```
mysql> create table dept(  
-> dept_id int PRIMARY KEY,  
-> dept_name varchar(20),  
-> hospital_id int);  
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> alter table dept add FOREIGN KEY( hospital_id) REFERENCES hospital(hospital_id);  
Query OK, 0 rows affected (0.09 sec)  
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> create table doct(  
-> doctor_name varchar(20),  
-> doctor_id int PRIMARY KEY,  
-> dept_id int,  
-> FOREIGN KEY (dept_id) REFERENCES dept(dept_id)  
-> );  
Query OK, 0 rows affected (0.06 sec)
```

```
mysql> create table patient (  
-> patient_id int PRIMARY KEY,  
-> patient_name varchar(20),  
-> age int,  
-> weight int,  
-> dept_id int,  
-> assign_nurse varchar(20),  
-> foreign key(dept_id) references dept(dept_id));  
Query OK, 0 rows affected (0.06 sec)
```

```
mysql> create table drug(  
-> drug_id int PRIMARY KEY,  
-> drug_name varchar(20),  
-> patient_id int,  
-> doctor_id int,  
-> foreign key(patient_id) references patient(patient_id));  
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> alter table drug add  
-> foreign key(doctor_id) references doct(doctor_id);  
Query OK, 0 rows affected (0.08 sec)  
Records: 0 Duplicates: 0 Warnings: 0
```

- Description of tables with adding primary key and foreign key

```
mysql> desc hospital;
```

Field	Type	Null	Key	Default	Extra
hospital_id	int	NO	PRI	NULL	
hospital_name	varchar(30)	YES		NULL	
hospital_address	varchar(30)	YES		NULL	
hospital_phno	int	YES		NULL	

4 rows in set (0.01 sec)

```
mysql> desc patient;
```

Field	Type	Null	Key	Default	Extra
patient_id	int	NO	PRI	NULL	
patient_name	varchar(20)	YES		NULL	
age	int	YES		NULL	
weight	int	YES		NULL	
dept_id	int	YES	MUL	NULL	
assign_nurse	varchar(20)	YES		NULL	

6 rows in set (0.00 sec)

```
mysql> desc drug;
```

Field	Type	Null	Key	Default	Extra
drug_id	int	NO	PRI	NULL	
drug_name	varchar(20)	YES		NULL	
patient_id	int	YES	MUL	NULL	
doctor_id	int	YES	MUL	NULL	

4 rows in set (0.00 sec)

```
mysql> desc dept;
```

Field	Type	Null	Key	Default	Extra
dept_id	int	NO	PRI	NULL	
dept_name	varchar(20)	YES		NULL	
hospital_id	int	YES	MUL	NULL	

```
3 rows in set (0.00 sec)
```

```
mysql> desc doct;
```

Field	Type	Null	Key	Default	Extra
doctor_name	varchar(20)	YES		NULL	
doctor_id	int	NO	PRI	NULL	
dept_id	int	YES	MUL	NULL	

```
3 rows in set (0.00 sec)
```

- Insert data into tables

```
mysql> insert into hospital values
-> (101,'AS_hospitals','bandlaguda,hyderabad','123098456'),
-> (102,'SA_hospitals','kalimandir,hyderabad','675893421'),
-> (103,'NA_hospitals','kavali,ap','894563768'),
-> (104,'Sk_hospitals','ongole,ap','896543157');
Query OK, 4 rows affected (0.01 sec)
Records: 4 Duplicates: 0 Warnings: 0
```

```
mysql> insert into dept values
-> (201,'general surgery',101),
-> (202,'accident',102),
-> (203,'emergency',103),
-> (204,'breast screening',102),
-> (205,'radiology',104),
-> (206,'neurology',103),
-> (207,'gynecology',101),
-> (208,'discharge lounge',104);
Query OK, 8 rows affected (0.01 sec)
Records: 8 Duplicates: 0 Warnings: 0
```

```
mysql> insert into doct values
-> ('sarika',302,203),
-> ('anu',303,201),
-> ('navya',304,202),
-> ('hari',305,204),
-> ('jack',306,203),
-> ('smith',307,202),
-> ('jack',308,204),
-> ('rosy',309,206),
-> ('nail',310,207),
-> ('leka',311,208),
-> ('lilli',312,207),
-> ('nial',314,205),
-> ('harika',301,201);
Query OK, 13 rows affected (0.01 sec)
Records: 13 Duplicates: 0 Warnings: 0
```

```
mysql> insert into patient values
-> (401,'jin',20,50,206,'nurse1'),
-> (402,'sin',21,54,201,'nurse3'),
-> (403,'sana',30,74,205,'nurse2'),
-> (404,'inaya',20,45,204,'nurse4'),
-> (405,'naya',21,45,205,'nurse4'),
-> (406,'nik',25,45,202,'nurse3'),
-> (407,'tamia',26,65,203,'nurse2'),
-> (408,'amia',24,45,201,'nurse1');
Query OK, 8 rows affected (0.01 sec)
Records: 8 Duplicates: 0 Warnings: 0
```

```
mysql> insert into drug values
-> (1,'paracetamol',401,301),
-> (2,'Cocaine',405,303),
-> (3,'Fentanyl',406,305),
-> (4,'Cannabis',407,307),
-> (5,'Hallucinogens',407,305);
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

- Retrieving data Using SELECT command.

```
mysql> select * from hospital;
+-----+-----+-----+-----+
| hospital_id | hospital_name | hospital_address | hospital_phno |
+-----+-----+-----+-----+
| 101 | AS_hospitals | bandlaguda,hyderabad | 123098456 |
| 102 | SA_hospitals | kalimandir,hyderabad | 675893421 |
| 103 | NA_hospitals | kavali,ap | 894563768 |
| 104 | Sk_hospitals | ongole,ap | 896543157 |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> select * from dept;
+-----+-----+-----+
| dept_id | dept_name | hospital_id |
+-----+-----+-----+
| 201 | general surgery | 101 |
| 202 | accident | 102 |
| 203 | emergency | 103 |
| 204 | breast screening | 102 |
| 205 | radiology | 104 |
| 206 | neurology | 103 |
| 207 | gynecology | 101 |
| 208 | discharge lounge | 104 |
+-----+-----+-----+
8 rows in set (0.00 sec)
```



```
mysql> select * from doct;
```

doctor_name	doctor_id	dept_id
harika	301	201
sarika	302	203
anu	303	201
navya	304	202
hari	305	204
jack	306	203
smith	307	202
jack	308	204
rosy	309	206
nail	310	207
leka	311	208
lilli	312	207
amar	313	206
nial	314	205

```
14 rows in set (0.00 sec)
```

```
mysql> select * from patient;
```

patient_id	patient_name	age	weight	dept_id	assign_nurse
401	jin	20	50	206	nurse1
402	sin	21	54	201	nurse3
403	sana	30	74	205	nurse2
404	inaya	20	45	204	nurse4
405	naya	21	45	205	nurse4
406	nik	25	45	202	nurse3
407	tamia	26	65	203	nurse2
408	amia	24	45	201	nurse1

```
8 rows in set (0.00 sec)
```

```
mysql> select * from drug;
```

drug_id	drug_name	patient_id	doctor_id
1	paracetamol	401	301
2	Cocaine	405	303
3	Fentanyl	406	305
4	Cannabis	407	307
5	Hallucinogens	407	305

```
5 rows in set (0.00 sec)
```

- Delete command

```
mysql> insert into drug values(6,'paracetamol',408,301);
Query OK, 1 row affected (0.01 sec)
```

```
mysql> select * from drug;
```

drug_id	drug_name	patient_id	doctor_id
1	paracetamol	401	301
2	Cocaine	405	303
3	Fentanyl	406	305
4	Cannabis	407	307
5	Hallucinogens	407	305
6	paracetamol	408	301

```
6 rows in set (0.00 sec)
```

```
mysql> delete from drug where drug_id = 6;
Query OK, 1 row affected (0.01 sec)
```

```
mysql> select * from drug;
```

drug_id	drug_name	patient_id	doctor_id
1	paracetamol	401	301
2	Cocaine	405	303
3	Fentanyl	406	305
4	Cannabis	407	307
5	Hallucinogens	407	305

```
5 rows in set (0.00 sec)
```

- Operators

Adding salary to doct table

```
mysql> alter table doct add (salary int);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> select * from doct;
```

doctor_name	doctor_id	dept_id	salary
harika	301	201	NULL
sarika	302	203	NULL
anu	303	201	NULL
navya	304	202	NULL
hari	305	204	NULL
jack	306	203	NULL
smith	307	202	NULL
jack	308	204	NULL
rosy	309	206	NULL
nail	310	207	NULL
leka	311	208	NULL
lilli	312	207	NULL
amar	313	206	NULL
nial	314	205	NULL

```
14 rows in set (0.00 sec)
```

Using update command

```
mysql> update doct set salary=30000 where doctor_name = 'harika';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> update doct set salary=40000 where salary is null;
Query OK, 13 rows affected (0.01 sec)
Rows matched: 13  Changed: 13  Warnings: 0
```

```
mysql> select * from doct;
```

doctor_name	doctor_id	dept_id	salary
harika	301	201	30000
sarika	302	203	40000
anu	303	201	40000
navya	304	202	40000
hari	305	204	40000
jack	306	203	40000
smith	307	202	40000
jack	308	204	40000
rosy	309	206	40000
nail	310	207	40000
leka	311	208	40000
lilli	312	207	40000
amar	313	206	40000
nial	314	205	40000

```
14 rows in set (0.00 sec)
```

```
mysql> select *,salary*12 as annual_salary from doct;
```

doctor_name	doctor_id	dept_id	salary	annual_salary
harika	301	201	30000	360000
sarika	302	203	40000	480000
anu	303	201	40000	480000
navya	304	202	40000	480000
hari	305	204	40000	480000
jack	306	203	40000	480000
smith	307	202	40000	480000
jack	308	204	40000	480000
rosy	309	206	40000	480000
nail	310	207	40000	480000
leka	311	208	40000	480000
lilli	312	207	40000	480000
amar	313	206	40000	480000
nial	314	205	40000	480000

```
14 rows in set (0.01 sec)
```

```
mysql> select * from doct where salary < 40000;
+-----+-----+-----+-----+
| doctor_name | doctor_id | dept_id | salary |
+-----+-----+-----+-----+
| harika      | 301       | 201     | 30000  |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

- LIKE operator

```
mysql> select * from doct where doctor_name like '%a';
+-----+-----+-----+-----+
| doctor_name | doctor_id | dept_id | salary |
+-----+-----+-----+-----+
| harika      | 301       | 201     | 30000  |
| sarika      | 302       | 203     | 40000  |
| navya       | 304       | 202     | 40000  |
| leka        | 311       | 208     | 40000  |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

- BETWEEN operator

```
mysql> select * from doct where doctor_id BETWEEN 304 and 312;
+-----+-----+-----+-----+
| doctor_name | doctor_id | dept_id | salary |
+-----+-----+-----+-----+
| navya       | 304       | 202     | 40000  |
| hari        | 305       | 204     | 40000  |
| jack        | 306       | 203     | 40000  |
| smith       | 307       | 202     | 40000  |
| jack        | 308       | 204     | 40000  |
| rosy        | 309       | 206     | 40000  |
| nail        | 310       | 207     | 40000  |
| leka        | 311       | 208     | 40000  |
| lilli       | 312       | 207     | 40000  |
+-----+-----+-----+-----+
9 rows in set (0.01 sec)
```



- Aggregate Functions

```
mysql> select sum(salary) as cost from doct;
+-----+
| cost  |
+-----+
| 550000 |
+-----+
1 row in set (0.01 sec)
```

```
mysql> select count(*) from doct;
+-----+
| count(*) |
+-----+
|      14  |
+-----+
1 row in set (0.01 sec)
```

```
mysql> select max(salary) from doct;
+-----+
| max(salary) |
+-----+
|      40000  |
+-----+
1 row in set (0.01 sec)
```

```
mysql> select * from doct where salary=(select min(salary) from doct);
+-----+-----+-----+-----+
| doctor_name | doctor_id | dept_id | salary |
+-----+-----+-----+-----+
| harika      |      301  |      201 | 30000  |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

## Cross join

```
mysql> select * from dept cross join doct;
```

dept_id	dept_name	hospital_id	doctor_name	doctor_id	dept_id	salary
208	discharge launge	104	harika	301	201	30000
207	gynecology	101	harika	301	201	30000
206	neurology	103	harika	301	201	30000
205	radiology	104	harika	301	201	30000
204	breast screening	102	harika	301	201	30000
203	emergency	103	harika	301	201	30000
202	accident	102	harika	301	201	30000
201	general surgery	101	harika	301	201	30000
208	discharge launge	104	sarika	302	203	40000
207	gynecology	101	sarika	302	203	40000
206	neurology	103	sarika	302	203	40000
205	radiology	104	sarika	302	203	40000
204	breast screening	102	sarika	302	203	40000
203	emergency	103	sarika	302	203	40000
202	accident	102	sarika	302	203	40000
201	general surgery	101	sarika	302	203	40000
208	discharge launge	104	anu	303	201	40000
207	gynecology	101	anu	303	201	40000
206	neurology	103	anu	303	201	40000
205	radiology	104	anu	303	201	40000
204	breast screening	102	anu	303	201	40000
203	emergency	103	anu	303	201	40000

## Inner join

```
mysql> select * from dept inner join doct where dept.dept_id=doct.doctor_id;  
Empty set (0.00 sec)
```

## Natural join

```
mysql> select * from drug natural join doct;
```

doctor_id	drug_id	drug_name	patient_id	doctor_name	dept_id	salary
301	1	paracetamol	401	harika	201	30000
303	2	Cocaine	405	anu	201	40000
305	3	Fentanyl	406	hari	204	40000
307	4	Cannabis	407	smith	202	40000
305	5	Hallucinogens	407	hari	204	40000

```
5 rows in set (0.00 sec)
```

----- \* *THANK YOU* \* -----